

**Dr. Duke's Phytochemical and Ethnobotanical Database**

**Chemicals Found in Angelica sinensis**

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
11	ADENINE	Root	--	--		Jim Duke's personal files.
3	ALANINE	Root	--	--		Jim Duke's personal files.
28	ALPHA-PINENE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
32	ALPHA-TOCOPHEROL	Root	--	--		Jim Duke's personal files.
5	ALUMINUM	Root	93	422	-0.0860532203055952	
1	ANGELIC-ACID	Root	--	--		Jim Duke's personal files.
12	ARACHIDONIC-ACID	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
14	ARGININE	Root	--	--		Jim Duke's personal files.
112	ASCORBIC-ACID	Root	67	304	-0.4721936580133219	
3	ASPARTIC-ACID	Root	--	--		Jim Duke's personal files.
26	BERGAPTEN	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
53	BETA-CAROTENE	Root	0.3	1.2	-0.42874913335629994	
47	BETA-SITOSTEROL	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
4	BIOTIN	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
10	BUTYLIDENE-PHTHALIDE	Root	--	--		Jim Duke's personal files.
4	CADINENE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
28	CALCIUM	Root	620	2820	-0.5018997684435467	

<b>Activity Count</b>	<b>Chemical</b>	<b>Plant Part</b>	<b>Low PPM</b>	<b>High PPM</b>	<b>StdDev</b>	<b>Reference Citation</b>
37	CARVACROL	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
37	CARVACROL	Root Essent. Oil	--	--		Jim Duke's personal files.
20	CHOLINE	Root	--	2470	-0.12100326278601606	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
24	CHROMIUM	Root	0.2	0.9	-0.3805576061834531	
2	COBALT	Root	3.3	15.1	-0.21746232835558876	
12	COPPER	Root	5	5	-0.7439970811056329	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
2	CYSTINE	Root	--	--		Jim Duke's personal files.
13	FALCARINDIOL	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
16	FALCARINOL	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
3	FALCARINONE	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
61	FERULIC-ACID	Plant	--	940	0.7045758177797922	Jim Duke's personal files.
61	FERULIC-ACID	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
15	FIBER	Root	172000	172000	1.8630150734263555	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
15	FOLACIN	Root	--	--		
23	FOLIC-ACID	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
8	FRUCTOSE	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)

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22	GABA	Root	--	--		Jim Duke's personal files.
22	GAMMA-AMINOBUTYRIC-ACID	Root	--	--		Jim Duke's personal files.
7	GLUCOSE	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
8	GLUTAMIC-ACID	Root	--	--		Jim Duke's personal files.
12	GLYCINE	Root	--	--		Jim Duke's personal files.
7	HISTIDINE	Root	--	--		Jim Duke's personal files.
6	IRON	Root	19.4	88	-0.313807642199598	
3	ISOLEUCINE	Root	--	--		Jim Duke's personal files.
3	ISOSAFROLE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
2	LEUCINE	Root	--	--		Jim Duke's personal files.
1	LIGNOCERIC-ACID	Root	--	--		Jim Duke's personal files.
7	LIGUSTILIDE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
7	LIGUSTILIDE	Essential Oil	--	450000	1	Jim Duke's personal files.
7	LIGUSTILIDE	Root Essent. Oil	--	739800	1	Jim Duke's personal files.
27	LINOLEIC-ACID	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	LYSINE	Root	--	--		Jim Duke's personal files.
65	MAGNESIUM	Root	583	2650	0.047066853971341596	

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14	MANGANESE	Root	0.6	2.6	-0.5148269484931834	
15	METHIONINE	Root	--	--		Jim Duke's personal files.
6	MYRISTIC-ACID	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	N-BUTYLPHthalide	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
39	NIACIN	Root	15	68	0.5147577614900641	
2	NICOTINAMIDE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
11	NICOTINIC-ACID	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
18	OLEIC-ACID	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
16	P-CYMENE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
13	PALMITIC-ACID	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
11	PANTOTHENIC-ACID	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
7	PHENYLALANINE	Root	--	--		Jim Duke's personal files.
2	PHOSPHATIDYL-CHOLINE	Root	--	--		Jim Duke's personal files.
4	PHOSPHORUS	Root	735	3340	-0.031231075436283107	
14	POTASSIUM	Root	2354	10700	-0.37188592487614675	
15	RIBOFLAVIN	Root	0.8	3.4	-0.14761901787013534	

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29	SAFROLE	Root Essent. Oil	--	--		Jim Duke's personal files.
29	SAFROLE	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
44	SCOPOLETIN	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
60	SELENIUM	Root	0.1	0.4	-0.3339983213346751	
1	SERINE	Root	--	--		Jim Duke's personal files.
4	SILICON	Root	0.8	3.4	-0.327286207739498	
1	SODIUM	Root	--	--		
5	STARCH	Root	33000	150000	-0.6933088087748416	
8	STEARIC-ACID	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
7	SUCCINIC-ACID	Root	--	--		Jim Duke's personal files.
14	SUCROSE	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
31	THIAMIN	Root	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	THREONINE	Root	--	--		Jim Duke's personal files.
4	TIN	Root	0.9	4	-1.2692190956073157	
29	TRYPTOPHAN	Root	--	--		Jim Duke's personal files.
8	TYROSINE	Root	--	--		Jim Duke's personal files.
22	UMBELLIFERONE	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)

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3	VALINE	Root	--	--		Jim Duke's personal files.
75	VITAMIN-E	Root	77	77		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
77	ZINC	Root	--	--		